IN THE U.S. PATENT AND TRADEMARK OFFICE

In re U.S. Patent Application of:

APPLICANTS: Jaako Vihriala

SERIAL NO.: 10/049,589   FILING DATE: April 3, 2002

EXAMINER: Ryman, Daniel J   ART UNIT: 2616

ATTORNEY'S DOCKET NO.: 870A.0002.U1 (US)

TITLE: A METHOD TO DECREASE SYNCHRONIZATION TIME IN HANDOVER

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANT'S APPEAL BRIEF

Sir:

The Applicant/Appellant hereby submits this APPEAL BRIEF to the Board of Patent Appeals and Interferences. Enclosed is a draft in the amount of $120 for a one month time extension. Should the undersigned attorney be mistaken as to time or fees, please consider this a petition for an additional extension of time under 37 C.F.R. § 1.136(a) or (b) that may be required to avoid dismissal of this appeal, and debit Deposit Account No. 50-1924 as appropriate.

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(1)   REAL PARTY IN INTEREST

The real party in interest (RPI) is Nokia Corp of Espoo, Finland; parent company of the Assignee Nokia Mobile Phones, Ltd.

(2)   RELATED APPEALS AND INTERFERENCES

There are no other pending appeals or interferences of which the undersigned representative and Applicant/Appellant is aware that will directly affect, be directly affected by or have a bearing on the Board's decision in this appeal.

(3)   STATUS OF CLAIMS

Claims 1-18 are pending in this appeal, and are reproduced in the Claims Appendix accompanying this Brief as those claims stood finally rejected by a final Office Action dated March 21, 2007.

This application was filed on April 3, 2002 with sixteen claims. In response to an Office Action dated January 12, 2006, the Applicant has amended claims 1-16. In response to a an Office Action dated October 19, 2006, the Applicant amended claims 1, 3, 7-11, 13, and 15-16 and added claims 17 and 18. In response to a final Office Action dated March 21, 2007, the Applicant filed a Pre-Appeal Brief Request for Review on June 21, 2007. A Notice of Panel decision from Pre-Appeal Review dated September 26, 2007 recited the panel had determined the status of the claims 1-18 is rejected. The claims as finally rejected are reproduced in an Appendix hereto (section 8).

(4)   STATUS OF AMENDMENTS

No amendment to the claims was proposed or entered subsequent to the final Office

Action dated March 21, 2007.

(5)   SUMMARY OF THE CLAIMED SUBJECT MATTER

It is noted that the page and line numbers described in regards to the invention are taken

from PCT WO 01/22620 A1 as filed on 13 February 2002 in the United States Patent and

Trademark Office.

When performing a handover, the distance between a mobile station and a new base

station is not known, so that also the propagation delay is not known (page 2, line 25, to

page 3, line 3). Thus, in the Background section, a conventional means to detect

propagation delay using a matched filter is described. However, as indicated in the

application, a matched filter requires a long search time (page 4, lines 33-34).

The present application discloses a method for performing synchronization of a mobile

network device to a network control device of a present radio network region. In an aspect

the invention includes detecting a source radio network region from which a handover of

said mobile network device to the present radio network region has been performed,

determining a start propagation delay value based on the detected source radio network

region of the mobile station, and searching an actual propagation delay value by using a

search strategy based on the determined start propagation delay value. The correct

propagation delay can thereby be detected quickly since the values of the propagation

delay from known neighboring cells are stored and used to generate a start value for the

search of the correct propagation delay.

Independent claims relate to a method for performing synchronization of a mobile network

device to a network control device of a present radio network region (claim 1); a network

control device of a present radio network region configured to detect a source radio

network region from which a handover of a mobile network device to the present radio

network region has been performed (claim 9); a network control device of a present radio

network region, including means for detecting a source radio network region from which a handover of a mobile network device to the present radio network region has been performed (claim 17); Dependent claims detail specifics as to wherein start propagation delay values are stored in a database for a plurality of adjacent sectors (claims 2, 10); for the method and device of claims 2 and 10, respectively, updating said database with said searched actual propagation delay value after performing said search step (claims 3, 11); for the method and device of claims 3 and 11, respectively, where one start propagation value is stored for each adjacent sector (claims 4, 12); for the method and device of claims 3 and 11, respectively, wherein each adjacent sector a plurality of start propagation values are used and an average of said plurality of start propagation values is used as a basis for said search strategy (claims 5 and 13); for the method and device of claims 5 and 13, respectively, a distribution of said plurality of start propagation values is also used as the basis for the search strategy (claims 6 and 14); wherein the search strategy is an expanding window (claims 7 and 15); and wherein the search strategy is a z-search (claims 8 and 16).

Specific to the claims, the elements of method claim 1 are detailed as follows:

performing synchronization of a mobile network device to a network control device of a present radio network region(page 7, lines 15-30);

detecting a source radio network region from which a handover of said mobile network device to said present radio network region has been performed (page 9, lines 1-15; page 11, lines 22-26);

determining a start propagation delay value based on said detected source radio network region of said mobile station (page 8, line 25 to page 9, line 15; and page 11, lines 28-34); *and*

searching an actual propagation delay value by using a search strategy based on said determined start propagation delay (page 10, lines 1 to page 11, line 10; and page 12, lines 1-5).

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The storing the start propagation delay values in a database for a plurality of adjacent sectors of dependent claims 2, and 10 is detailed at page 13 lines 12-18 and page 14 lines 1-13; the updating said database with said searched actual propagation delay value after performing said search step of dependent claims 3, and 11 is detailed at page 13 lines 12-18; where one start propagation value is stored for each adjacent sector of claims 4, and 12 and where each adjacent sector a plurality of start propagation values are used and an average of said plurality of start propagation values is used as a basis for said search strategy of dependent claims 5 and 13 and where a distribution of said plurality of start propagation values is also used as the basis for the search strategy of dependent claims 6 and 14 are detailed at page 14 lines 1-13; wherein the search strategy is an expanding window of dependent claims 7 and 15 and wherein the search strategy is a z-search of dependent claims 8 and 16 are detailed at page 10 line 6 to page 11 line 10. Each of these claims recites in plain language and need no further explanation of terms.

Independent claim 9 is similar to method claim 1, but recites in part "A device, the device being a network control device of a present radio network region, comprising" whereas claim 1 recites in part "A method comprising." Support for these claim 9 elements may be found at page 14, lines 20-32.

Independent claim 17 is similar to device claim 9, but recites in part "A device, the device being a network control device of a present radio network region, comprising: means for." Support for these claim 17 elements may be found at page 12, lines 7-22.

(6)   GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Issue A.   Whether claims 1-6, 9-14, and 17-18 are obvious under 35 U.S.C. § 103(a) over the combination of Applicant's admitted prior art and Dahlman (U.S. Pat. No. 6,526,039).

Issue B.   Whether claims 7-8 and 15-16 are obvious under 35 U.S.C. § 103(a) over the combination of Applicant's admitted prior art and Dahlman (U.S. Pat. No. 6,526,039)

as applied to claims 1 and 9 and further in view of Papasakellariou (U.S. Pat. No. 6,275,483).

(7) ARGUMENT

In the arguments below, claims argued separately are deemed not to fall with other claims in the group.

ISSUE A. OBVIOUSNESS OF CLAIMS 1-6, 9-14, AND 17-18 OVER APPLICANT'S ADMITTED PRIOR ART AND DAHLMAN:

Claim 1: Independent method claim 1 recites in relevant part:

determining a start propagation delay value based on said detected source radio network region of said mobile; and

searching an actual propagation delay value by using a search strategy based on said determined start propagation delay.

The Appellants assert that Applicant's admitted prior art and Dahlman fail to disclose these claim elements.

Independent device claim 9 and independent means plus function claim 17 stands or falls with claim 1.

Dahlman relates to a method and system for facilitating timing of base stations in an asynchronous CDMA mobile communications system (abstract). Dahlman discloses clear motivation for the method where Dahlman discloses:

> "A system and method are needed for **reducing the complexity of and the processing resources** used during the cell search and mobile positioning processes in asynchronous networks. **In particular, it would be advantageous to utilize as much a priori search information as possible**

to help reduce the level of complexity and increase the search rate for cell-searches and to enable simplified mobile positioning solutions. As described in detail below, the present invention successfully resolves the above-described problems," (emphasis added), (col. 4, lines 22-26).

As illustrated in Figure 1 of Dahlman a base station controller **accumulates** round trip delay (RTD) estimates for all of its base stations (BSs). Dahlman discloses that "Essentially, in an asynchronous CDMA system, a BSC "**knows**" the downlink scrambling codes for all of its BSs," (col. 5, lines 51-52). Dahlman discloses that even though a set of scrambling codes to be searched by a mobile station (MS) can be small the MS still does not know the timing of these codes (col. 5, lines 64-66). Thus, in Dahlman a method is described where in addition to a BS sending scrambling codes to an MS the **BS can also send their accumulated estimated RTDs to the MS** (col. 6, lines 3-6).

The Applicant contends that **the Examiner fails to take into account the difference between an estimated RTD and an actual propagation delay**. The Applicant argues that the RTD refers to a <u>time difference</u> between Base Stations, whereas the propagation delay is the time delay between the mobile station and the BSs. This distinction is seen as supported at least where Dahlman discloses:

> "The present invention solves this problem by calculating an improved RTD **that accounts for the propagation delays** of uplink and downlink signals. Essentially, **the improved RTD is the difference between the time at which a first BS begins transmitting its downlink signal and the time at which a second BS begins transmitting its downlink signal**," (col. 9, lines 8-14).

Moreover, in Dahlman, it is described that the accuracy of the estimated RTDs can be greatly improved **by accounting for** propagation delays between the MS and the BS, which are used to estimate the RTD (col. 4, lines 51-61). **Hence, Dahlman is seen to distinguish between an RTD and a propagation delay**. In particular, according to this passage in Dahlman, the propagation delay has to be known in order to be able to estimate the RTD. This is also described in the detailed description of Dahlman in col. 8, line 60, to col. 9, line 20.

The Applicants note that Dahlman discloses that as a result the MS which received the <u>RTD estimates</u> can now <u>report or forward</u> the estimated RTDs to the network along with

signal quality information for neighboring BSs. In this manner Dahlman discloses that each BSC can maintain an RTD estimate table, which can be updated from the RTD reports **received from the MSs**, (col. 6, lines 10-16). Clearly, Dahlman can not be seen to disclose or suggest **determining a start propagation delay value based on a detected source radio network region** as in claim 1.

Dahlman further discloses:

> Subsequently, the **BSCs can send entries from this RTD estimate table to the MS in the neighboring cell list message**, along with the corresponding scrambling codes (with the BSC keeping track of the estimated RTD information it has already sent in previous messages to the MS). Using this novel technique, the BSs have known relative timing differences. **Consequently,** in an exemplary embodiment, when an MS initiates a search for a potential target BS, the **MS already has an estimate of the timing of that BS (i.e., from the RTD information) as compared to its source BS**. As such, the resulting cell-search procedure used in an asynchronous CDMA system can be accomplished much quicker than with prior procedures. **When the MS has synchronized with the potential target BS, the MS has an improved estimate of the RTD, which in turn, the MS can report back to the source BS** (preferably along with quality information for the potential target BS). **The source BS (or its associated BSC) can then update this entry in the RTD estimate table,**" (emphasis added), (col.6, lines 19-36).

The Applicant notes that as Dahlman discloses, the improved estimate of the RTD is merely the result of the MS synchronizing with the potential target BS. The Applicant notes that the synchronization implies that the original estimate, i.e. the start propagation delay, is used to find the improved estimate, i.e. the actual propagation delay. Clearly, the **improved estimate of the RTD** as cited by the Examiner and disclosed in Dahlman is not seen to disclose or suggest an **actual propagation delay value** as in claim 1.

Furthermore, the Applicant contends that there is no disclosure in Dahlman to disclose or suggest that the improved estimate of the RTD is the result of searching an **actual propagation delay value** by using a search strategy based on a **determined start propagation delay** as in claim 1.

The Examiner states in the "Response to Arguments" section:

"Here a "cell-search generally refers to a procedure whereby an MS accomplishes chip-, slot-and frame-synchronization with a BS." (Dahlman: col. 2, lines 22-24). Therefore, Dahlman makes very clear that the RTD is merely an estimate of the propagation delay which the mobile station uses to initiate a search for the actual propagation delay. See also Dahlman: col. 6, lines 31-35 (the MS sends an "improved estimate of the RTD" back to the source BS, which implies that the original estimate, i.e. the start propagation delay, is used to find the improved estimate, i.e. the actual propagation delay).

The Applicant notes that immediately following this cite Dahlman also discloses:

"At step 108, with the a priori neighbor cell RTD estimate (timing) information readily at hand, along with the other corresponding neighbor cell information, the MS can initiate a primary cell-search using a conventional matched filter arrangement," (emphasis added), (col. 6, lines 60-64).

The Applicant contends that as cited Dahlman discloses a neighbor cell search, but does not disclose or suggest searching an actual propagation delay value as in claim 1. Further, as cited Dahlman is disclosing that "**a priori neighbor cell RTD estimate** (timing) **information [is] readily at hand**." The Applicant contends that first equating an RTD estimate with an actual propagation delay value and then applying where the RTD estimate is used to do a search of the actual propagation delay value as in claim 1 is clearly improper.

The Applicant notes that in Dahlman a cell "search window" is adjusted based upon an uncertainty of an estimated RTD value (col. 7, lines 39-45). The Applicant notes that as cited by the Examiner this search in Dahlman is based on an RTD value, which is a time difference between BSs. The search in Dahlman is clearly not based on a propagation delay, or a time difference between an MS and a BS, as in claim 1. For at least this reason this disclosure is not be seen to suggest "**searching an actual propagation delay value** by using a search strategy **based on said determined start propagation delay**," as in claim 1.

Further, as stated above Dahlman discloses that the BSC sends RTD estimates to MS in accordance with the method in Dahlman. Thus, the Applicant contends that Dahlman can not be seen to be **determining a start propogation delay value based on said detected source radio network region** of the MS as in claim 1.

Dahlman goes on to disclose:

> "The MS's utilization of the primary cell-search matched filter **produces signal peaks that correspond to the BSs that the MS can receive with sufficient quality to qualify as hand-over candidate cells**. At step 110, the MS correlates <u>the RTD estimates with the produced matched filter signal peaks</u> **to determine which peaks are most likely to correspond to which scrambling codes in the neighbor cell list (step 112). At step 114, based on the correlations produced at step 112, the MS can select the scrambling codes for the most likely hand-over candidate cells from the neighbor cell list**. The MS can then initiate the cell-search (step 116)," (emphasis added), (col. 6, line 64 to col. 7, line 7).

The Applicant contends that the method in Dahlman cited by the Examiner where the RTD **estimates** are correlated with the produced matched filter signal peaks can not be seen to disclose or suggest **determining a start propagation delay** based on a detected radio network source and **searching an actual propagation delay** value by using a search strategy **based on the determined start propagation delay** as in claim 1.

The Applicants contend that Dahlman makes no disclosure or suggestion that **a start propogation delay** is determined as in claim 1. In addition, for at least this reason Dahlman does not disclose or suggest searching an **actual propogation delay based on the determined propogation delay** as in claim 1. Moreover, a search strategy in Dahlman as cited by the Examiner does not disclose or suggest a search strategy is used to find an actual propagation delay as in claim 1.

The Applicant contends that in claim 1 **a propagation delay** between the mobile station and the base station is actually **searched**, and this search is performed with a suitable start value. Clearly, Dalhman does not suggest as claim 1 recites in part "**searching an actual propagation delay value by using a search strategy based on said determined start propagation delay**," where the start propagation delay value is determined based on a

detected source radio network region of the mobile station and where the search is effected when the mobile station is about to enter a handover as in claim 1.

For at least the reasons stated the Applicant contends that the references are not seen to disclose or suggest claim 1.

Dependent claims 2 and 10 depend from claims 1, and 9, respectively. Claims 2 and 10 similarly recite where *start propagation delay values are stored for a plurality of adjacent sectors*. Claim 10 additionally recites a *database* and *wherein said determining unit is configured to access said database*. As cited by the Examiner Dahlman discloses "In a preferred embodiment of the present invention, **the RTD estimate table** is maintained in a database at the BSC," (emphasis added), (col. 6, lines 17-18). The Applicants contend that maintaining the RTD estimate table can not be seen to disclose or suggest wherein start propagation delay values are stored in a database, as in claims 2 and 10.

Dependent claims 3 and 11 depend from claims 2 and 10, respectively. Claims 3 and 11 similarly relate to updating the database with searched or current delay propagation value detected by a search. As cited by the Examiner Dahlman discloses "When the MS has synchronized with the potential target BS, the MS has an improved estimate of the RTD, which in turn, the MS can report back to the source BS (preferably along with quality information for the potential target BS). The source BS (or its associated BSC) can then update this entry in the RTD estimate table," (col. 6, lines 31-36). The Applicant contends that an improved RTD estimate as a result of synchronization by the MS that is sent to the source BS for updating the RTD estimate table as in Dahlman can not be seen to disclose or suggest **updating a database** with a **searched actual propagation delay value after performing said search step** as in claims 3 and 11.

Dependent claims 5 and 13 depend from claims 3 and 11, respectively. Claims 5 and 13 similarly relate to wherein for each adjacent sector an average of a plurality of start propagation values are used as a basis for the actual propagation delay search strategy. The Examiner states "Examiner takes official notice that averaging is a well-known mechanism for combining a plurality of estimates into a single estimate." The Applicant contends that the Examiner improperly cites "(col. 6, lines 14-18, see also col. 6, lines 31-

36)." These cite locations in Dahlman are identical to those cited against claims 2 and 10 of the application. Further, as cited the Applicant contends that Dahlman clearly does not mention an actual propagation delay search method as required for the rejection. The Applicant contends that Dahlman as cited can not be seen to disclose or suggest claims 5 and 13.

Dependent claims 6 and 14 depend from claims 5 and 13, respectively. Claims 6 and 14 similarly recite "wherein a distribution of said plurality of start propagation values is also used as the basis for said search strategy." The Applicant notes that the Examiner has cited Dahlman against claims 6 and 14 as was cited against claims 2 and 10 of the application.

As cited Dahlman discloses:

> "The present invention solves this lack of timing information problem by having the source BS send to the MS (along with the neighboring cell list) an estimated RTD between the source BS and each of the BSs on the neighboring cell list. In other words, **instead of sending only the scrambling codes of the neighboring BSs to the MS, the source BS also transmits each of their estimated RTDS.** For SOHO purposes, the MSs can report (on a regular basis, triggered by some event, or on demand from the BSC) to the network the estimated RTDs along with signal quality information (e.g., signal strength, signal-to-interference ratio or SIR, etc.) for the neighboring BSs. **Consequently, each BSC can maintain an RTD estimate table, which can be updated continuously from the RTD reports received from the MSs.** In a preferred embodiment of the present invention, **the RTD estimate table is maintained in a database at the BSC,**" (emphasis added), (col. 6, lines 3-18).

The Applicant contends that nowhere in Dahlman is there even a mention of a search strategy for an actual propagation delay value. As stated earlier, Dahlman explicitly distinguishes between an RTD and a propagation delay value and an RTD estimate as cited in Dahlman (col. 4, lines 51-61). The Applicant contends that Dahlman as cited does not disclose or suggest claims 6 and 14.

Issue B. OBVIOUSNESS OF CLAIMS 7, 8, 15, AND 16 OVER APPLICANT'S ADMITTED PRIOR ART IN VIEW OF DAHLMAN AND IN FURTHER VIEW OF PAPASAKELLARIOU:

Papasakellariou relates to a method for fast identification of spread spectrum signals in CDMA systems. In particular, as derivable from the abstract, the basic idea of Papasakellariou is to search a base station using the same spreading sequence but in a different code phase. Thus, according to Papasakellariou the arrival time of each path from a specific base station is identified by selecting specific code offsets (col. 5, lines 47-53). Papasakellariou provides a method for fast acquisition of the BS pilot, and the BS does not gather information on the delays where the handover took place.

In the reference cited by the Examiner, Papasakellariou discloses "The method to search the uncertainty area, which is sometimes referred to herein as the "search area", can be based on any conventional approach, such as serial search, Z-search, and expanded window search," (col. 5, lines 31-34). The applicant contends that although a Z-search and expanding window search is mentioned in the cited reference, there is no motivation to use the search strategies in the specific context of the present application. The Applicant contends that Papasakellariou does not disclose or suggest a search strategy in connection with searching for an actual propagation delay value as in claim1.
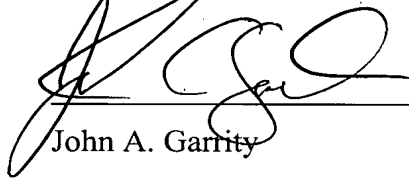
Therefore, the Applicant contends that even applying a Z-search and expanding window search as mentioned in Papasakellariou which searches for spreading code offsets, with the Applicant's admitted prior art in view of Dahlman which **uses a known propagation delay in order to estimate an RTD** still would not disclose or suggest "**searching an actual propagation delay value by using a search strategy based on said determined start propagation delay**," as recited in at least claims .

Pursuant to 35 USC 41.37, a CLAIMS APPENDIX, EVIDENCE APPENDIX, and RELATED PROCEEDINGS APPENDIX follow the certificate of mailing below.

For at least the above reasons, the Appellants contend that the Applicant's admitted prior art; Dahlman; and Papasakellariou alone or in combination with one another or ordinary skill in the art, does not render obvious any of the claims argued above. The Appellants respectfully requests the Board reverse the final rejection in the Office Action of March

21, 2007, and further that the Board rule that the pending claims are patentable over the cited art.

Respectfully submitted:

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450.

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(8)   CLAIMS APPENDIX

1. (Previously Presented) A method comprising:

performing synchronization of a mobile network device to a network control device of a present radio network region, further comprising:

detecting a source radio network region from which a handover of said mobile network device to said present radio network region has been performed;

determining a start propagation delay value based on said detected source radio network region of said mobile station; and

searching an actual propagation delay value by using a search strategy based on said determined start propagation delay.

2. (Previously Presented) The method of claim 1, wherein start propagation delay values are stored in a database for a plurality of adjacent sectors.

3. (Previously Presented) The method of claim 2, further comprising:

updating said database with said searched actual

propagation delay value after performing said search step.

4. (Previously Presented) The method of claim 3, wherein one start propagation value is stored for each adjacent sector.

5. (Previously Presented) The method of claim 3, wherein for each adjacent sector a plurality of start propagation values are used and an average of said plurality of start propagation values is used as a basis for said search strategy.

6. (Previously Presented) The method of claim 5, wherein a distribution of said plurality of start propagation values is also used as the basis for said search strategy.

7. (Previously Presented) The method of claim 1, wherein said search strategy is an expanding window.

8. (Previously Presented) The method of claim 1, wherein said search strategy is a z-search.

9. (Previously Presented) A device,

the device being a network control device of a present radio network region, comprising:

a detecting unit configured to detect a source radio network region from which a handover of a mobile network device to the present radio network region has been performed;

a determining unit configured to determine a start propagation delay value based on said detected source radio network region of said mobile station; and

a search unit configured to search an actual propagation delay value by using a search strategy based on the determined start propagation delay value.

10. (Previously Presented) The device of claim 9, further comprising:

a database in which start propagation delay values are stored for a plurality of adjacent sectors;

wherein said determining unit is configured to access said database.

11. (Previously Presented) The device of claim 10, further comprising:

an updating unit configured to update said database with the current propagation delay value detected by said search unit.

12. (Previously Presented) The device of claim 11, wherein one start propagation value is

stored in said database for each adjacent sector.

13. (Previously Presented) The device of claim 11, wherein for each adjacent sector a plurality of start propagation values are stored in said database and said updating unit is configured to use an average of said plurality of start propagation values as a basis for said search strategy.

14. (Previously Presented) The device of claim 13, wherein a distribution of said plurality of start propagation values is also used as the basis for said search strategy.

15. (Currently Amended) The device of claim 9, wherein said search strategy is an expanding window.

16. (Previously Presented) The device of claim 9, wherein said search strategy is a z-search.

17. (Previously Presented) A device,

the device being a network control device of a present radio network region, comprising:

means for detecting a source radio network region from which a handover of a mobile network device to the present radio network region has been performed;

means for determining a start propagation delay value based on said detected source radio network region of said mobile station; and

means for searching an actual propagation delay value by using a search strategy based on the determined start propagation delay value.

18. (Previously Presented) The device of claim 17, wherein:

the means for detecting comprises a source cell detector;

the means for determining and the means for searching comprise a controller coupled to a memory.

END OF CLAIMS

(9)   EVIDENCE APPENDIX

Attached please find copies of the Dahlman and Papasakellariou references relied upon by

the Examiner in the final rejection.

(10)   RELATED PROCEEDINGS APPENDIX

Section (2) above recites that there are no related proceedings, so this appendix is

intentionally left blank.